

en—*National Society for Crippled Children and Adults*, 17 p., illus., paper, \$1. A guide for the selection of toys to help in the development of the child.

WILD FOLK IN THE MOUNTAINS—Carroll Lane Fenton—*John Day*, 96 p., illus. with drawings by the author, \$3. A book for children about mountain wildlife.

THE YEAR BOOK OF THE INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS 1958—*International Council of Scientific Unions*, 74 p., paper, 75¢.

Science News Letter, June 7, 1958

BIOLOGY

Carbon Dioxide Changes Undifferentiated Cells

► WHEN CARBON dioxide is bubbled into a solution containing undifferentiated cells that have just begun to grow after egg fertilization, the cells become brain cells.

Dr. Reed Flickinger, zoologist at the University of California at Los Angeles, is studying the process by which like embryonic cells suddenly begin to specialize to form specific structures such as brain, muscle, skeleton, and reproductive organs.

Addition of small amounts of carbon dioxide—large amounts kill the cells—to undifferentiated frog embryo cells caused the cells to form nervous tissue the day after fertilization, Dr. Flickinger said. Three or four days later definite brain structures could be identified.

Apparently the carbon dioxide stimulates protein synthesis in the cell by causing release of nucleic acids and storage protein from the yolk granules packed in the cell, the UCLA zoologist said.

All cells have equal potential of becoming brain cells or any kind of cell in the body, he pointed out, because they all carry the same genetic information. But some unknown stimulus makes them specialize. Perhaps the carbon-dioxide-stimulated protein synthesis triggers the cell-differentiating mechanism.

There seems to be a specific order in which specialized tissue is formed. Nervous tissue forms first, followed by muscle cells and reproductive organs.

Science News Letter, June 7, 1958

Questions

ASTRONOMY—What are tektites? p. 363.

ELECTRONICS—How can the moon aid in voice communication by telephone? p. 356.

EVOLUTION—When did the prehistoric animal *Daphneus* live? p. 363.

MEDICINE—What is chemopallidectomy? p. 361.

SURGERY—What effect did a parathyroid transplant operation have on the amount of oral calcium required by the patient? p. 357.

Photographs: Cover, Bendix Aviation Corporation; p. 355, Sikorsky Aviation; p. 358, British Information Services; p. 359, Dr. Jean-Pierre Perrenoud; p. 362; U. S. Weather Bureau; p. 368, Eastman Chemical Products, Inc.

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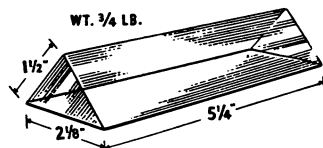
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